

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT J. O'DEA and ROBERT E. STENGEL

Appeal No. 1999-0416
Application 08/627,537

ON BRIEF

Before HAIRSTON, JERRY SMITH and BARRY, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-20, which constitute all the claims in the application.

The disclosed invention pertains to a method and apparatus for conditioning a modulated signal, such as to enhance

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amplifier performance in a transmitter. The modulated signal is conditioned by expanding, using a window function, selected portions of the signal envelope that have signal envelope magnitudes below a threshold value.

Representative claim 1 is reproduced as follows:

1. A method of conditioning a signal for amplification, comprising the steps of:

providing a modulated signal having a signal envelope that varies in magnitude over time;

determining minimum values for the signal envelope;

applying a window expansion function to scale portions of the signal envelope having a minimum value below a particular threshold, such that each portion when scaled has a new minimum value of at least the particular threshold, thereby generating a conditioned signal; and

processing the conditioned signal for amplification.

The examiner relies on the following references:

Birchler	5,287,387	Feb. 15, 1994
Van Dasler et al. (Van Dasler)	5,319,676	June 07, 1994

Claims 1-20 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Birchler taken alone or Birchler in view of Van Dasler.

Rather than repeat the arguments of appellants or the

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examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 1-20. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine,

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837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual

determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re

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Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the

arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered [see 37 CFR § 1.192(a)].

With respect to independent claims 1, 6, 10 and 15, the examiner finds that Birchler teaches the solution to the analogous problem of maintaining high signal levels below a maximum threshold value. The examiner essentially finds that

it would have been obvious to the artisan to apply Birchler's technique to the analogous problem of maintaining signal levels above a minimum threshold value. To the extent that any other limitations of the claims are absent from Birchler, the examiner takes official notice that such limitations were well known in the art. Van Dasler is cited to support the examiner's position that placing the waveshaping operation before the windowing operation would have been obvious [answer, pages 3-8].

Appellants argue that there is no suggestion within the applied prior art to modify the teachings of Birchler to solve an "analogous" problem. Appellants also argue that the proposed modification of Birchler would render Birchler inoperable for its intended purpose. Since there is no motivation to modify Birchler in the manner proposed by the examiner, appellants argue that the examiner has failed to establish a prima facie case of obviousness [brief, pages 3-5].

The examiner responds that motivation to modify the

references comes from the general knowledge of the artisan that Birchler's disclosed method could be applied to the analogous problem solved by appellants' invention. The examiner also responds that since the problems solved by Birchler's system and appellants' invention are analogous, the argument that Birchler is rendered inoperable if modified as suggested by the examiner fails [answer, pages 8-11].

We agree with the position argued by appellants. The problem solved by Birchler relates to the reduction of the peak-to-average ratio (PAR) level of a communication signal without causing significant signal splatter. This problem is affected by

the appearance of high level peaks in the communication signal and is apparently unaffected by low level signal values. The claimed invention, on the other hand, relates to conditioning signals so that the envelope of a modulated signal is maintained above a particular threshold. Birchler offers no teaching or suggestion with respect to modifying signals of the envelope which are below some threshold. The only reason

for applying Birchler's teachings to the type of signals claimed by appellants is based on the examiner's finding that the problems to be solved are analogous. The examiner's theory of analogousness, however, is not evidence of obviousness. There must be some teaching on the record that would have led the artisan to believe that the solution to the PAR problem would have relevance to the problem solved by appellants' invention. The examiner's analysis only makes sense when one starts with the claimed invention and works backwards in search of similar systems. Such a basis to find obviousness improperly relies on the hindsight teachings of appellants' own disclosure and claims. There is no suggestion within the applied prior art to modify Birchler to condition envelope signals in the manner recited in the claimed invention.

For these reasons, we do not sustain the examiner's rejection of independent claims 1, 6, 10 or 15, or of any of the claims which depend therefrom. Therefore, the decision of the examiner rejecting claims 1-20 is reversed.

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REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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JERRY SMITH)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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